



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,869	03/01/2002	Quinn K. Tong	1988.EEM	7273

7590

04/01/2004

Charles W. Almer  
Counsel, I.P.  
NATIONAL STARCH AND CHEMICAL COMPANY  
10 Finderne Avenue  
Bridgewater, NJ 08807-0500

EXAMINER

AYLWARD, DAVID E

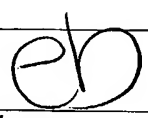
ART UNIT

PAPER NUMBER

1712

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/084,869	<b>Applicant(s)</b> TONG ET AL.	
	<b>Examiner</b> David E Aylward	<b>Art Unit</b> 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-12, 14-21 and 23-31 is/are rejected.
- 7) ☒ Claim(s) 7, 8, 13 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

1. Because the claims to be acted on in the RCE case included cancelled claim 2, the claims had to be renumbered so that the active claims were numbered consecutively. Thus, all the claims after the cancelled claim have been renumbered reducing each by one. Thus, the claim designated as "22" in the amendment filed in this case after the first action is renumbered as "21". Thus, the active claims are 1-31. The action that follows refers to these renumbered claims.

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on Dec. 12, 2003 has been entered.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1712

4. Claim 1-6, 9-12, 14-21 and 23-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilleo (6265776) in view of DD218377, DD'377.

Gilleo teaches an underfill, coated and solidified on a semiconductor wafer before dicing (Abstract col. 3, ll. 58-61). An underfill coating alone is taught at col. 4, ll. 19-20. One of ordinary skill in the art would fairly interpret the teaching at col. 4, l. 32 of "drying or hardening a thermoset resin to a very low cross-linking density" as a teaching of partial curing or as a "B-stage process". An epoxy resin/anhydride thermoset coating is taught at col. 4, ll. 48-49. The other components of the underfill encapsulant of the instant claims are taught in the examples in col. 8 except for the imidazole-anhydride adduct. The claimed method of preparing an electronic package is taught at col. 5, ll. 1-29. The Derwent and CAplus abstracts are used as a guide to the content of DD'377. These abstracts show this reference teaches imidazole-anhydride adduct, when used as epoxy curing agents, eliminate the formation of bubbles formed when encapsulants for electronics are cured with anhydrides alone. Thus, it would have been obvious to one of ordinary skill, motivated to improve the encapsulation of electronic components by eliminating the formation of bubbles to replace the anhydride curing agent used in the composition taught by Gilleo with the imidazole-anhydride adduct taught by DD'377. Such a replacement results in a composition which renders that of the instant claims obvious.

5. Claims 7, 8, 13 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Aylward whose telephone number is (571) 272-1083. The examiner can normally be reached on Monday through Friday from 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Jagannathan, can be reached on (571) 272-1119. The fax phone number for this Group is (703) 872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

Art Unit: 1712

published applications may be obtained from either private PAIR or public PAIR. Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Dra*

3/17/04

  
**PHILIP TUCKER**  
**PRIMARY EXAMINER**  
ART UNIT 1712